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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/677,842

10/02/2003

Robert Elliott Robotham

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EXAMINER

FAROUL, FARAH

ART UNIT

PAPER NUMBER

2416

MAIL DATE

DELIVERY MODE

11/26/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/677,842	Applicant(s) ROBOTHAM, ROBERT ELLIOTT	
	Examiner FARAH FAROUL	Art Unit 2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 July 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The following Office Action is based on the amendment filed on July 22, 2008, having claims 1-14.

Response to Arguments

2. Applicant's arguments with respect to claims 1-14 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

3. Claims 7 and 11 are objected to because of the following informalities:

The phrase "so as" in line 2 of claims 7 and 11 are to be deleted to render the claims positive. "The phrase "so as" is followed by intended use language. It is not clear whether the limitations that follow are part of the claimed invention. The phrase is to be deleted to render the claims affirmative.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2 and 4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 recites the limitation "using a second grant issued in response to (after) the first request for scheduling transmission of the second unit of the traffic to the switch fabric". The limitation renders the claim vague and indefinite. It is not clear when this step is being performed. Applicant needs to clarify whether the second grant is being issued before the first. In claim 1, from which claim 2 depends, the first grant is being issued after the second request and yet applicant is claiming that second grant is being sent after the first request. Applicant should also clarify to which priority request the "second unit of traffic" corresponds to. It is strongly suggested that applicant lists the steps sequentially within the claims to clarify the limitations.

Claim 4 recites the limitation "the first line card sends the first request after the second request". The limitation renders the claim vague and indefinite. Applicant needs to clarify whether "sending" means requesting (request phase), granting (grant phase) or transmitting (data phase) the first request and when this step is being performed in regards to the previous steps of the claimed invention.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-4 and 6-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art (Fig 1 and background of invention of the instant application, hereinafter "APA") in view of Kawai et al. (US 7,058,751 B2).

For claims 1, APA discloses sending, to the switch fabric by a first line card of the line cards, a first request for transmitting a first unit of traffic of a first priority to the switch fabric (paragraph 4, lines 4-6 wherein a first line card generates a low priority request), the first request indicating a first output port for which the first unit of traffic is destined (paragraph 8, lines 1-4, wherein the request identifies which output port will be used)

using, by the first line card, a first grant received from the switch fabric permitting transmission of the first unit of traffic to the switch fabric (paragraph 5, lines 1-3 wherein the first request is granted)

The APA does not explicitly disclose the first grant is issued after a second request for a second unit of traffic having a second priority lower than the first priority and being destined to the first output port, for scheduling transmission of the first unit of traffic to the switch fabric. However, the APA does disclose the first grant is issued after

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a second request for a second unit of traffic having a second priority higher than the first priority and being destined to the first output port, for scheduling transmission of the first unit of traffic to the switch fabric. It would have been obvious to one skilled in the art to request traffic of any priority (higher or lower) to satisfy particular service needs.

Kawarai, from the same or similar field of endeavor, teaches scheduling packets of highest priority level with lowest priority and scheduling packets of lowest priority level with highest priority (column 9, lines 23-32).

Thus, it would have been obvious to one of ordinary skill in the art to combine the packet scheduling method of Kawarai with the communication network of APA at the time of the invention. The scheduling method of Kawarai is implemented into the communication network of APA by granting the traffic requests with highest priority with low priority level and vice versa. The motivation to combine the scheduling method of Kawarai with the communication network of APA is to reduce delay in the network.

For claim 2, APA discloses using a second grant issued in response to the first request for scheduling transmission of the second unit of the traffic to the switch fabric (paragraph 5, lines 1-5 wherein a second grant is made for the second request).

For claim 3, APA discloses the first priority and the second priority are selected from a plurality of priorities corresponding to a respective plurality of service classes (paragraph 8, lines 1-3 where each request has indication of priority (high or low)).

For claim 4, APA does not disclose the first line card sending the first request after the second request. However, Kawarai, from the same or similar field of endeavor,

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teaches scheduling packets of highest priority level with lowest priority and scheduling packets of lowest priority level with highest priority (column 9, lines 23-32).

For claims 6 and 10, APA discloses a first line card of the plurality of line cards, the first line card configured to send requests for transmitting units of the traffic of specified priorities to the switch fabric (paragraph 4, lines 4-6 and paragraph 8, lines 1-4) and to receive grants permitting transmission of the units of the traffic to switch fabric the first line card further configured to utilize a first grant of the grants corresponding to a first request of the requests (paragraph 5, lines 1-3), wherein the first request is of a lower priority than a second request of the requests (paragraph 4, lines 4-6), for transmitting a first unit of the traffic corresponding to the second request to the switch fabric. APA does not explicitly disclose a plurality (a set) of such requests. However, it would have been obvious to one skilled in the art to send a plurality of requests/grants using the same technique to reduce network delay and increase network capacity.

For claims 7 and 11, APA discloses the first line card utilizing the first grant for transmitting the first unit of the traffic to conform to a latency criterion pertaining to a first data stream comprising the first unit of the traffic (paragraph 5, lines 1-3).

For claims 8 and 12, APA discloses the first line card utilizing a second grant of the grants corresponding to the second request (paragraph 5, lines 1-3. Kawai teaches transmitting a second unit of traffic corresponding to the first request to the switch fabric (column 9, lines 23-32).

For claims 9 and 13, APA discloses the first line card issuing the first request prior to the second request (paragraph 5, lines 1-3 wherein the first request is granted before the first).

For claim 14, APA discloses the entire claimed invention except for performing grant substitution.

Kawarai, from the same or similar field of endeavor, teaches scheduling packets of highest priority level with lowest priority and scheduling packets of lowest priority level with highest priority (column 9, lines 23-32).

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over APA in view of (US 7,058,751 B2) and further in view of Angle et al. (US 6,771,596 B1).

For claim 5, APA discloses the entire claimed invention except for the first line card sends a first set of requests of a highest priority of a plurality of priorities, with the first set of requests corresponding to a first quantity of the traffic in an amount of guaranteed traffic flow serviced by the first line card, and sends a second set of requests of a lower priority of the priorities for a second quantity of the traffic

Angle, from the same or similar field of endeavor, teaches sending a plurality of requests with different priority levels, wherein the requests with the highest priority are first presented followed by the requests with lower priority (column 16, lines 10-20).

Thus, it would have been obvious to one of ordinary skill in the art to combine the packet scheduling method of Angle is implemented into the modified system of APA and Kamari at the time of the invention. The scheduling method of Angle is implemented into the modified system of APA and Kamari sending the highest priority

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requests prior to the lower priority requests. The motivation to combine the scheduling method of Angle with the modified system of APA and Kamari is to reduce the latency in the network.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to FARAH FAROUL whose telephone number is (571)270-1421. The examiner can normally be reached on Monday - Friday 6:30 AM - 4 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Firmin Backer can be reached on 571-272-6703. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Farah Faroul/
Examiner, Art Unit 2416

/Melvin Marcelo/
Primary Examiner, Art Unit 2416